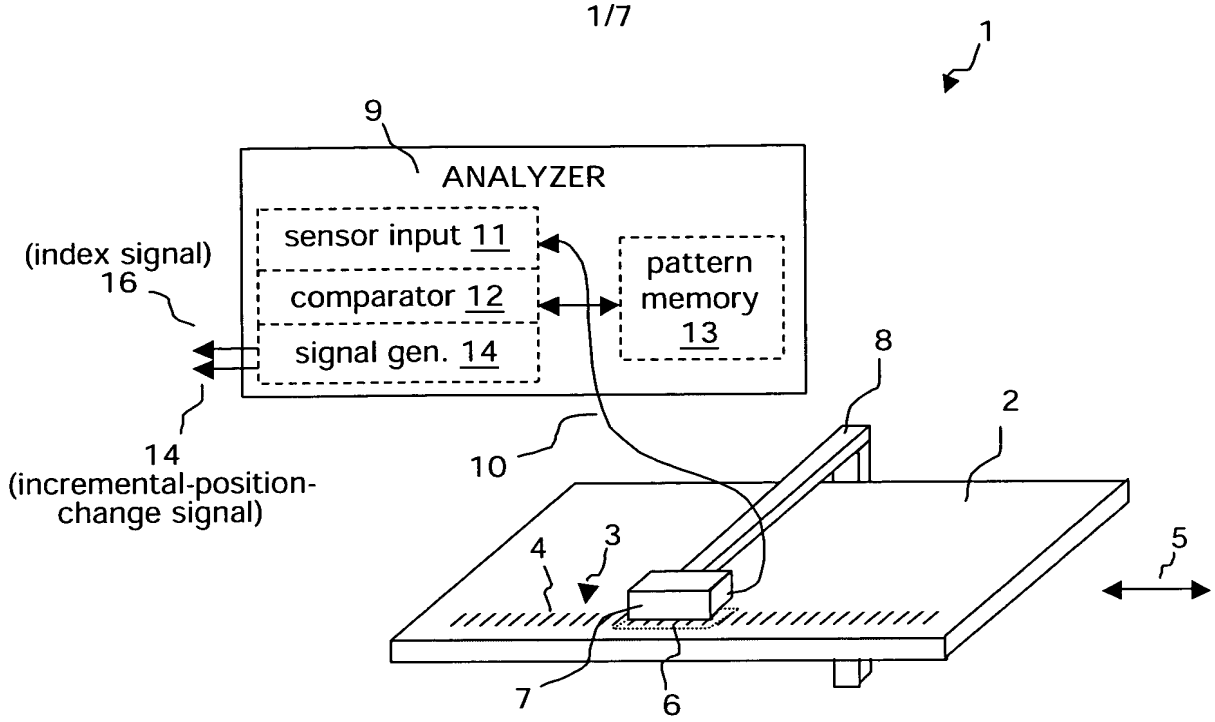

1
9
ANALYZER
sensor input 11
comparator 12
signal gen. 14
pattern memory 13
(index signal)
16
14
(incremental-position-change signal)
10
8
2
4
3
5
7
6

Fig. 1

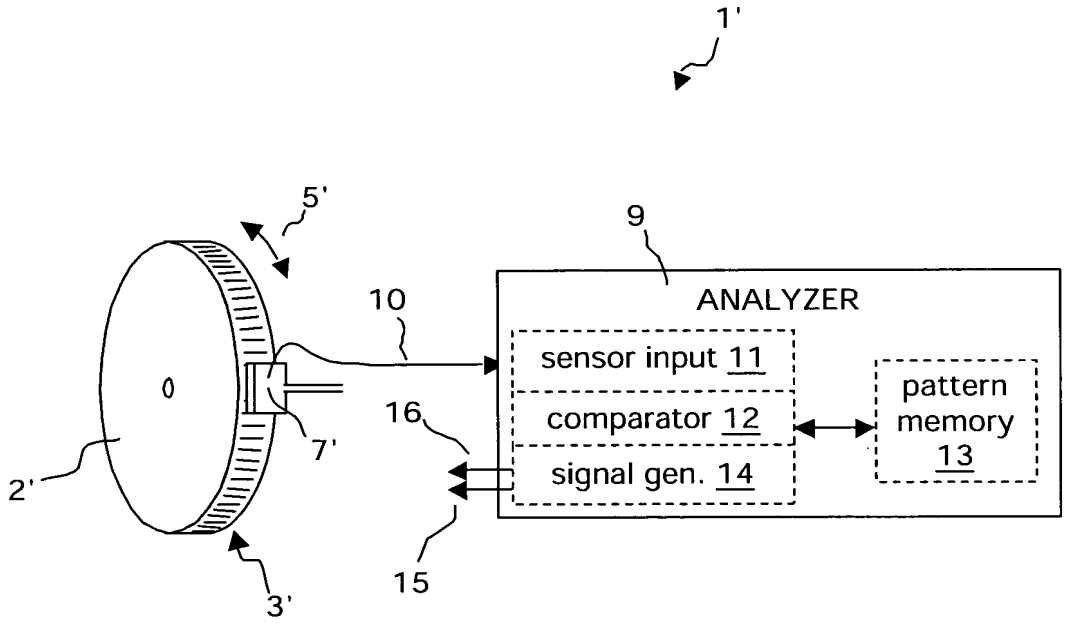

1'
5'
9
ANALYZER
10
sensor input 11
comparator 12
signal gen. 14
pattern memory 13
16
7'
2'
3'
15

Fig. 2

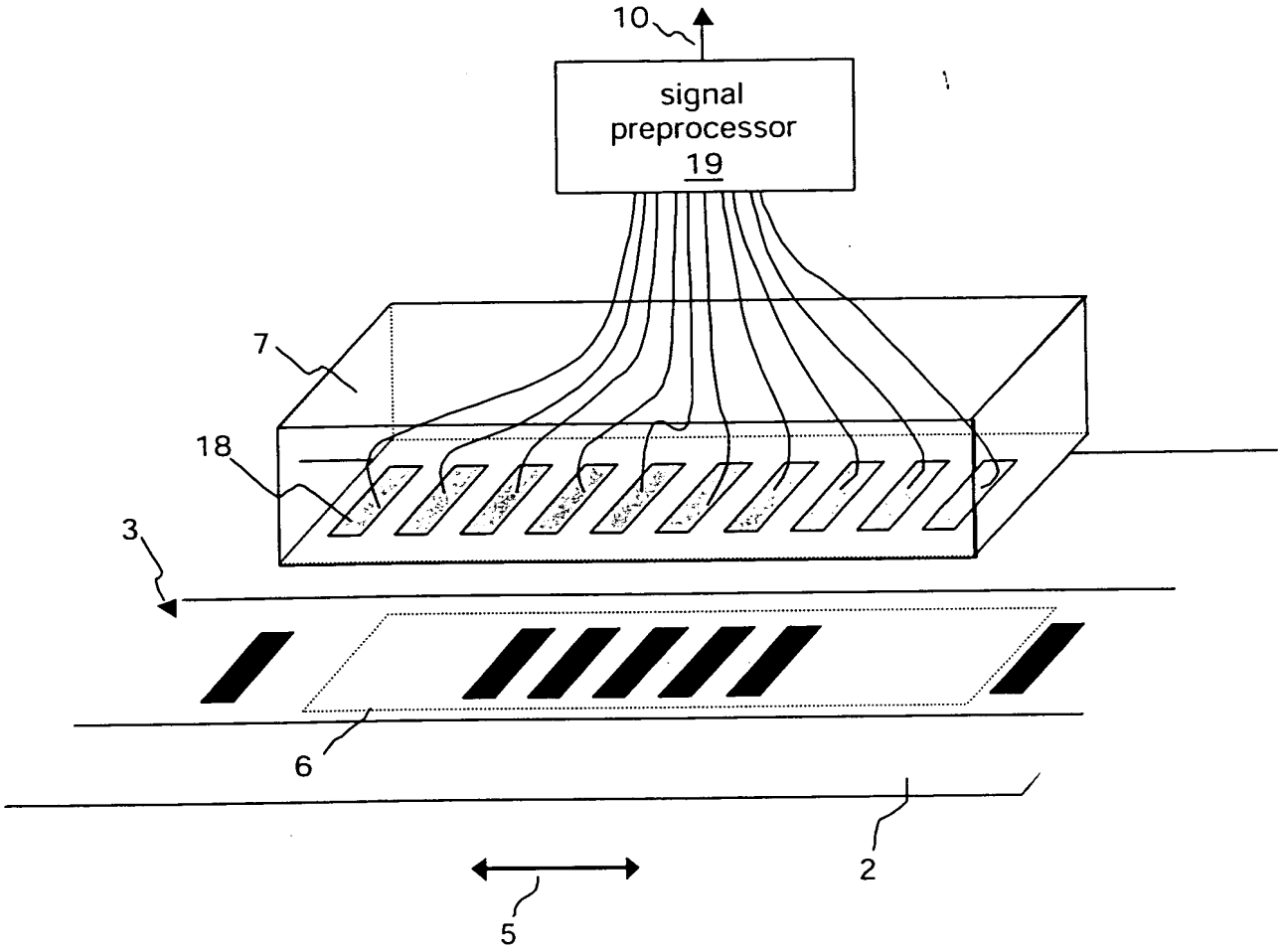


Fig. 3

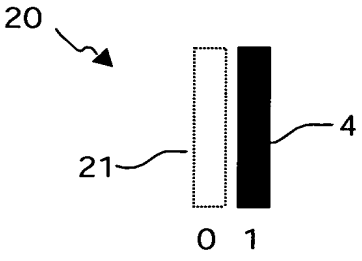


Fig. 4a

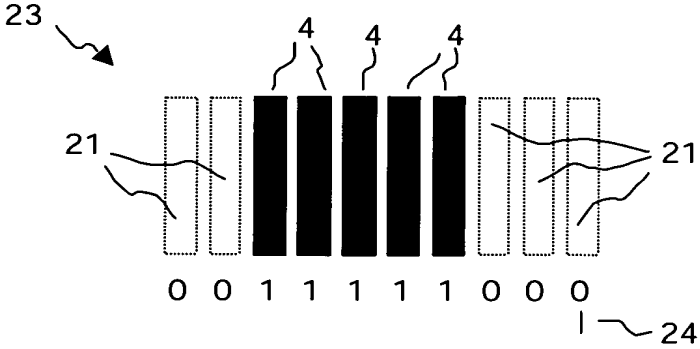


Fig. 4b

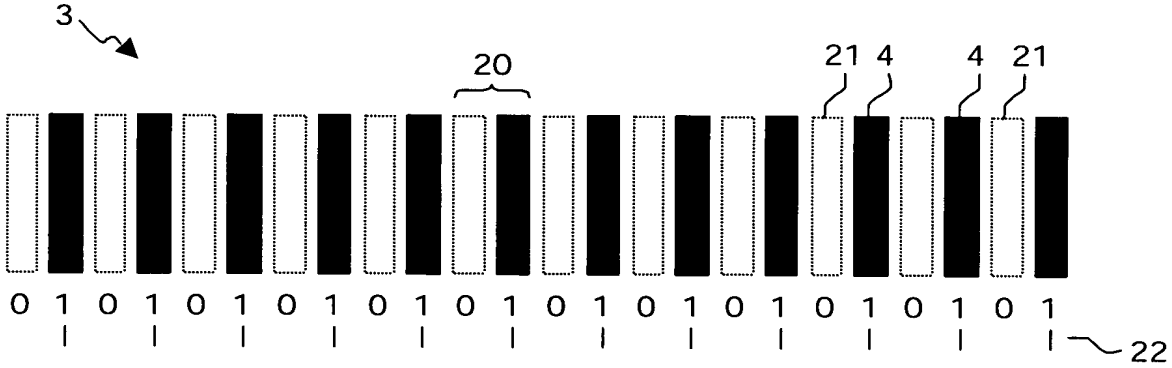


Fig. 4c

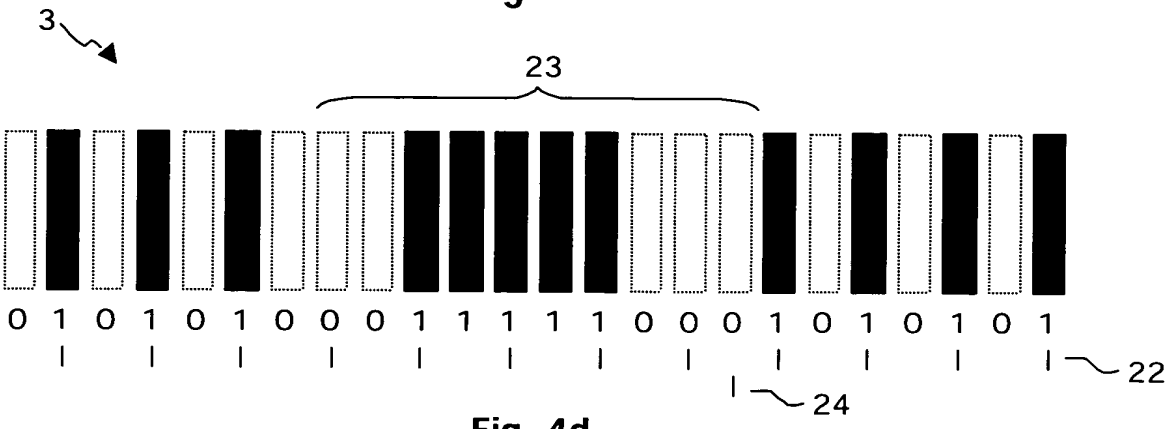


Fig. 4d

	viewed pattern	incremental signal	index signal
P1	1010101010	0	0
P2	0101010101	1	0
P3	0010101010	0	0
P4	0001010101	1	0
P5	1000101010	0	0
P6	1100010101	1	0
P7	1110001010	0	0
P8	1111000101	1	0
P9	1111100010	0	0
P10	0111110001	1	0
P11	0011111000	0	1
P12	0001111100	1	0
P13	1000111110	0	0
P14	0100011111	1	0
P15	1010001111	0	0
P16	0101000111	1	0
P17	1010100011	0	0
P18	0101010001	1	0
P19	1010101000	0	0
P20	0101010100	1	0
P1	1010101010	0	0

Fig. 5

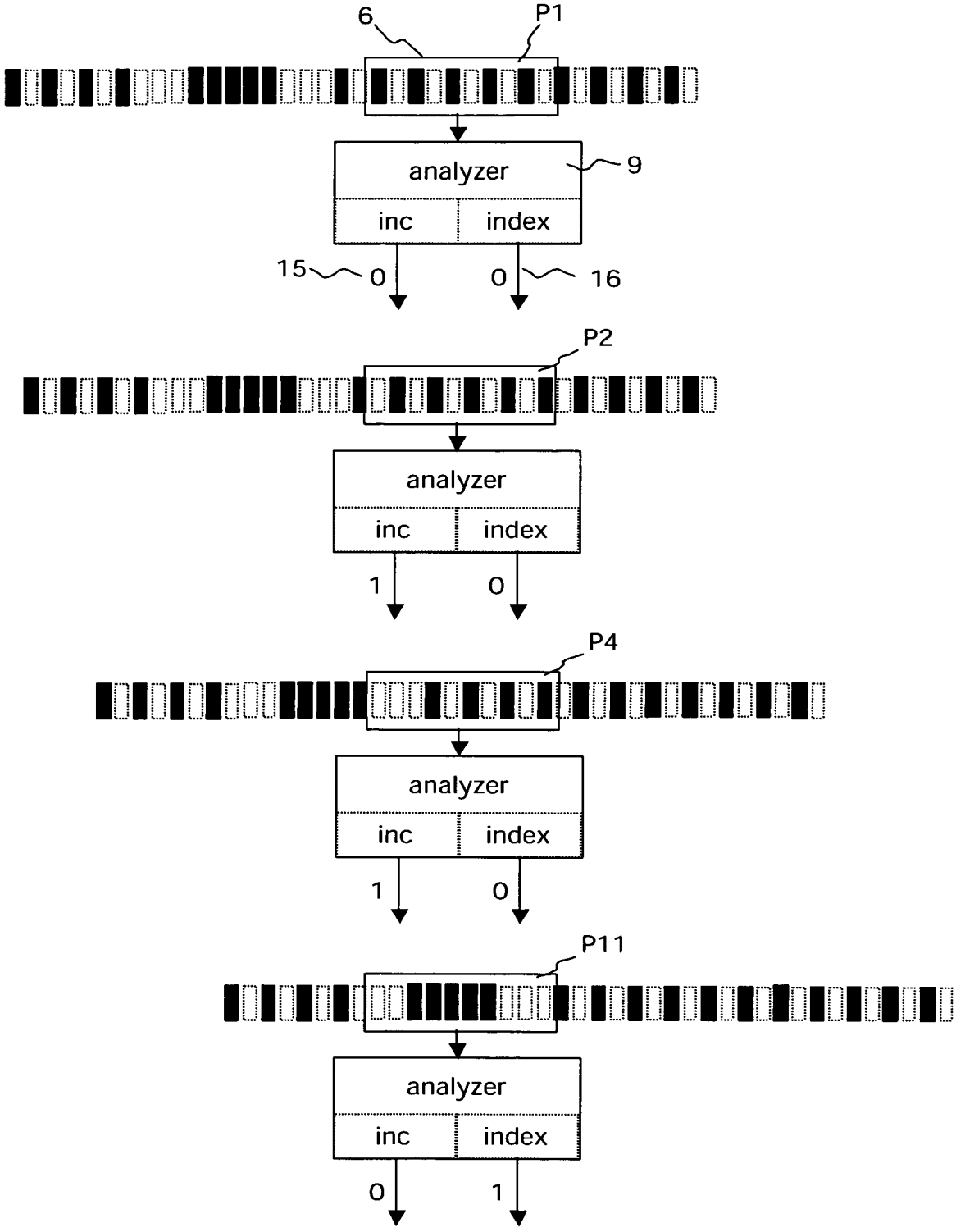
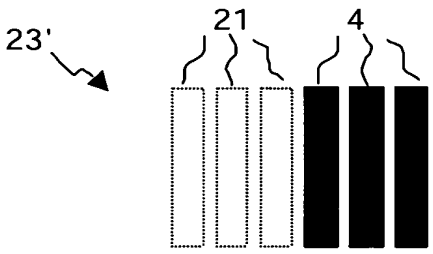

6
P1
analyzer
9
inc
index
15
0
0
16
P2
analyzer
inc
index
1
0
P4
analyzer
inc
index
1
0
P11
analyzer
inc
index
0
1

Fig. 6



	viewed pattern	incremental signal	index signal
R1	010101	1	0
R2	101010	0	0
R3	110101	1	0
R4	111010	0	1
R5	011101	1	0
R6	001110	0	0
R7	000111	1	1
R8	100011	0	0
R9	010001	1	0
R10	101000	0	0
R11	010100	1	0
R12	101010	0	0
R1	010101	1	0

Fig. 7

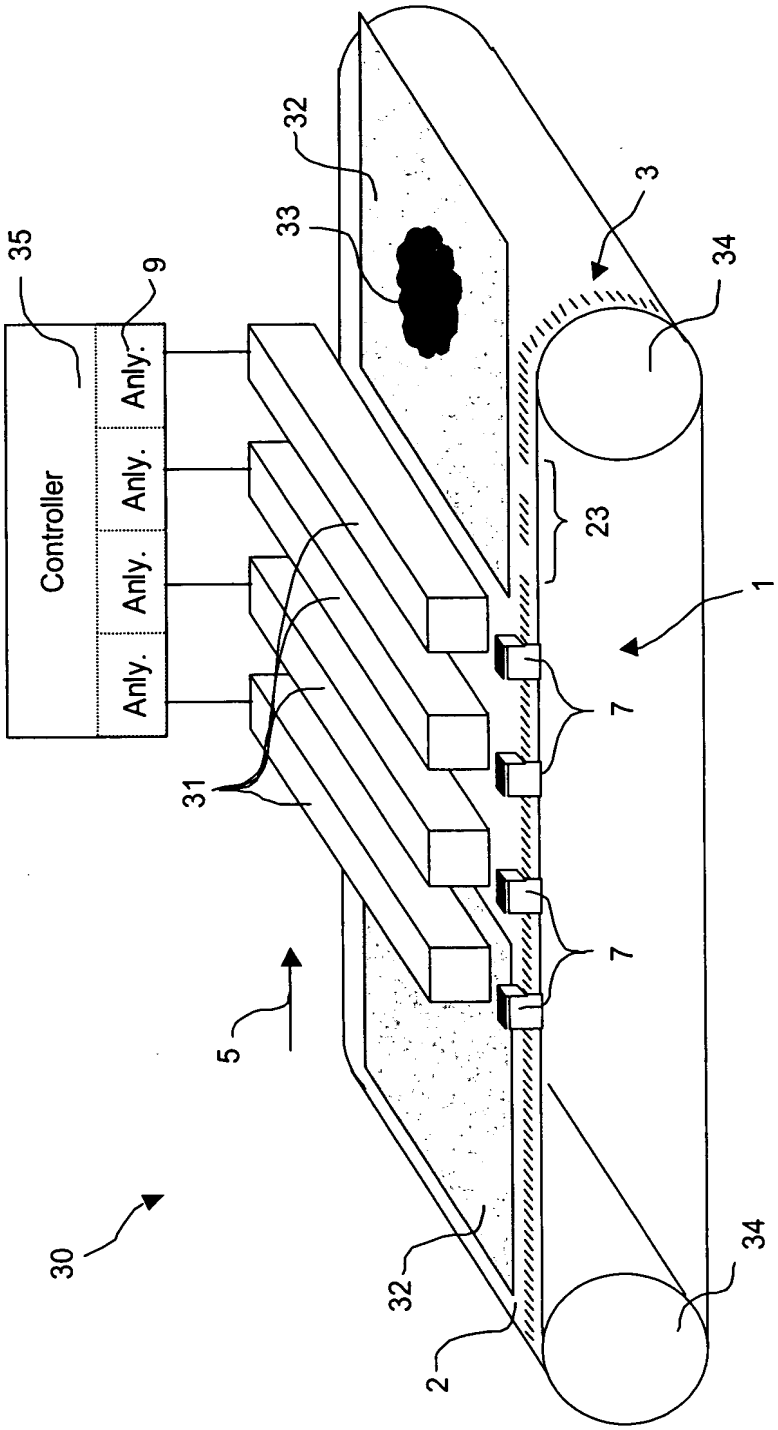

Controller
Anly.
Anly.
Anly.
Anly.
35
9
32
33
3
34
23
1
7
7
31
5
30
32
34
2

Fig. 8